

REMARKS

Claims 1-3, 5-10, 12 and 15-17 have been amended. Claims 4, 11, 13 and 14 have been canceled without prejudice.

The Examiner has objected to applicants' claims 5, 6 and 7 due to certain informalities. In particular, the Examiner states that the recitation in claims 5 and 7 of the "plurality of devices described in claim 1" is not understandable since claim 1 only recites one device. The Examiner further states that claim 6 depends on itself and, therefore is improper.

In order to overcome these objections, applicants have amended claim 5 to recite "An image obtaining apparatus, comprising a device described in claim 1 in plural". Additionally, Claim 6 has been amended to depend from claim 5 and claim 7 has been amended to recite "A method of controlling an image obtaining apparatus described in claim 5." Applicants' claims 5-7, as amended, are thus no longer objectionable as informal.

The Examiner has further rejected applicants' claims 11-15 under 35 USC 112, second paragraph, as failing to particularly point out and distinctly claim applicants' invention. In particular, the Examiner points out that the recitation of "said imaging device" lacks a sufficient antecedent basis.

Claims 11 and 13-14 have been canceled, thereby obviating the Examiner's rejection with respect to these claims. Claim 12, in turn, has been amended to depend from independent claim 8 and claim 15 already depends from independent claim 8 which recites "a plurality of imaging devices." Applicants' amended claim 12 and claim 15 thus particularly point out and

distinctly claims applicants' invention in compliance with the provisions of 35 USC 112, second paragraph.

The Examiner has further rejected applicants' claims 8, 9 and 10 under 35 USC 102(b) as anticipated by the Tariki reference (US Published Patent Application Publication No. US2002/0047910). The Examiner has also rejected applicants' claims 11-17 under 35 USC 103(a) as unpatentable over the latter reference taken with the Ying reference (US Published Patent Application Publication No. US2005/0219144). The Examiner has additionally rejected applicants' claims 1-4 also under 35 USC 103(a) as unpatentable over the Abe patent (US Patent No. 6,052,509) taken with the Ying reference. With respect to applicants' claims, as amended, these rejections are respectfully traversed.

More particularly, applicants' independent claim 8 has been amended to better define applicants' invention. In particular, amended claim 8 recites an image obtaining apparatus, comprising a plurality of imaging devices which provide a wireless communication function and a single imaging function, wherein the number of the plurality of imaging devices is larger than that of subjects to be imaged by the plurality of imaging devices, and an aperture value of the imaging function in each imaging device is fixed, wherein the plurality of imaging devices provide, as a whole, one or more imaging functions by using image synthesis to synthesize imaging data of a part of the plurality of imaging devices which has an appropriate aperture value for the subjects and captures a picture of the subjects.

As can be appreciated from the above, the invention recited of amended in claim 8 has the following features: (i) the number of a plurality of imaging devices is larger than that of subjects to be imaged by the plurality of imaging devices, (ii) an aperture value of the imaging function in each imaging device is fixed, and (iii) imaging data of a part of the plurality of imaging devices, which has an appropriate aperture value for the subjects and captures a picture of the subjects, are synthesized to provide one or more imaging functions. With these features, the iris providing each aperture is simple, because moving parts of the iris to adjust the aperture value are unnecessary. The cost of the imaging device is thus decreased and electric power consumption of the imaging device is suppressed. This, in turn, results in less cost and electric power consumption, when many imaging devices are networked to construct a sensing system.

Moreover, such a system can capture pictures of a subject from various angles. Thus, as a whole, dynamic ranges of aperture, focus and sensitivity and the like are extended. In other words, even if each imaging device is simple and its aperture value is fixed, many imaging devices, each of which has an aperture value different from each other, are networked, so as a whole, they function as high-level imaging equipment.

Such a construction is not taught or suggested by the cited art of record. The Tariki reference discloses an image transmission apparatus having two cameras, each of which captures a picture of a subject 104 or 105, and data sensed by each of the cameras is superimposed, as shown in FIGS. 1 or 2. Also, in the Tariki reference, the aperture values, the focuses, and the

directions of the cameras are adjusted in accordance with the amount of light from the subjects, and a position and a distance of the subjects.

Thus the Tariki reference fails to teach or suggest wherein the number of the plurality of imaging devices is larger than that of subjects to be imaged by the plurality of imaging devices, and an aperture value of the imaging function in each imaging device is fixed, wherein the plurality of imaging devices provide, as a whole, one or more imaging functions by using image synthesis to synthesize imaging data of a part of the plurality of imaging devices which has an appropriate aperture value for the subjects and captures a picture of the subjects, as recited in applicants' amended claim 8. Specifically, as pointed out above, in the Tariki reference, the number of imaging devices is equal to the number of subjects, the aperture value of each imaging device varies, and the image data of all the imaging devices is superimposed.

Applicants' amended independent claim 8, and its respective dependent claims, thus patentably distinguish over the Tariki reference. The Ying reference fails to add anything to the Tariki reference to change this conclusion. Applicants' claim 8, and its respective dependent claims, thus patentably distinguish over the combination of the Tariki and Ying references.

Applicants' independent claim 1 has also been amended to better define applicants' invention. Amended claim 1 recites a wireless imaging device, comprising: an imaging section, arranged to provide a function of imaging a subject; and a communication section, arranged to provide a wireless communication function, wherein said imaging section comprises an optical lens which has a spherical body, an iris to limit incident light on the optical lens, an optical

sensor to convert the incident light passed through an aperture of the iris into an electric signal, and an antenna integrally provided with the iris, to wireless-transmit the electric signal converted into a radio signal by said communication section, wherein the iris and the antenna are arranged to a midsection of the optical lens, and the optical sensor is arranged to a part of a spherical surface of the optical lens.

As can be appreciated from the above, applicants' amended claim 1 includes the following features: an optical lens which has a spherical body; an iris to limit incident light on the optical lens; an optical sensor to convert the incident light passed through an aperture of the iris into an electric signal; and an antenna integrally provided with the iris, to wireless-transmit the electric signal converted into a radio signal by said communication section; wherein the iris and the antenna are arranged to a midsection of the optical lens, and the optical sensor is arranged to a part of a spherical surface of the optical lens.

Such a construction is not taught or suggested by the Abe patent and Ying reference. The Abe patent teaches a camera portion 10 which wireless communicates with a body portion 40 and has an image pickup portion 12. The image pickup portion 12 has lenses 182a and 186a, an iris 184a, and an image sensor 188 as shown in FIG. 6. The lenses 182a/186a have a cask-shaped section. On the other hand, the Ying reference teaches an antenna arranged on an outer surface of a cylindrical lens 80 as shown in Figs. 7A to 7E.

The lenses taught by the Abe patent and the Ying reference thus do not have a spherical body. In this regard, we note that the Examiner pointed out that an element 180b in FIG. 6 in

the Abe patent is an optical lens. However, this element is, in fact, an actuator for driving an image stabilizing optical element 180a as described in col. 8, line 67 to col. 9, line 1 of the Abe patent. Moreover, as previously mentioned above, the lenses 182a/186a in the Abe patent are cask-shaped and the lens 80 in the Ying reference is cylindrically shaped.

Additionally, the antenna in the Ying reference is not arranged at the midsection of the lens 80, but instead it is arranged on the outer surface of lens 80. Furthermore, in neither the Abe patent nor the Ying reference is the antenna integrally provided with the iris.

In fact, the Ying reference does not even disclose an iris. More particularly, the Examiner has argued that the Ying reference teaches an “antenna integrally provided with a lens that has an aperture or opening (see Figures 7A, 7B and 7C).” However, these figures simply show an antenna (80, 82 or 83, 84) situated on the outer surface of a solid cylindrical lens 80. There is clearly no aperture or opening shown for the lens, so that the Examiner’s argument is not supported by the reference. Also, the iris 184a in the Abe patent is completely separate from the antenna 22.

Finally, neither the Abe patent nor Ying references teaches or suggests an optical sensor arranged on a part of a spherical surface of an optical lens which has the spherical body. Again, the Ying reference does not teach an optical sensor and the Abe patent teaches an image sensor 188 separate from the optical lenses.

Thus, the combination of the Abe patent and the Ying reference fails to teach or suggest applicants’ amended claim 1, and its respective dependent claims, all of which recite wherein

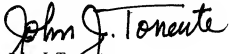
said imaging section comprises an optical lens which has a spherical body, an iris to limit incident light on the optical lens, an optical sensor to convert the incident light passed through an aperture of the iris into an electric signal, and an antenna integrally provided with the iris, to wireless-transmit the electric signal converted into a radio signal by said communication section, wherein the iris and the antenna are arranged to a midsection of the optical lens, and the optical sensor is arranged to a part of a spherical surface of the optical lens.

In view of the above, it is submitted that applicants' claims, as amended, patentably distinguish over the cited art of record. Accordingly, reconsideration of the claims is respectfully requested.

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